No. 8500001

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

South Dakota Agricultural Experimental Station

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF eighteen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS REQUIRED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

(*Waived, except that this waiver shall not apply to breeder seed, foundation seed, labeling requirements, and blending limitations.)

WHEAT
'Guard'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D. C. this 30th day of May in the year of our Lord one thousand nine hundred and eighty-six.

Attest:

Kenneth A. [illegible]
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Richard E. Lyng
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION

APPROVAL EXPIRES 4-30-85
FORM APPROVED: OMB NO. 0581-0055

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S)
South Dakota Agricultural Experiment Sta.
South Dakota State University

2. TEMPORARY DESIGNATION
SD 8015

3. VARIETY NAME
Guard, CI 17934

4. ADDRESS *(Street and No. or R.F.D. No., City, State, and Zip Code)*
Dept. of Plant Science
Brookings, SD 57007-1096

5. PHONE *(Include area code)*
(605) 688-5121

FOR OFFICIAL USE ONLY
PVPO NUMBER
8500001

6. GENUS AND SPECIES NAME
Triticum aestivum L.

7. FAMILY NAME *(Botanical)*
Graminea

FILING
DATE 10/1/84
TIME 2:30 ☐ A.M. ☒ P.M.

8. KIND NAME
Hard Red Spring Wheat

9. DATE OF DETERMINATION
Released for Increase 2-1-83 to Crop Imp. Assoc.

FEES RECEIVED
AMOUNT FOR FILING
$ 1,800
DATE 10/1/84
AMOUNT FOR CERTIFICATE
$ 200.
DATE 4/15/86

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*
Agricultural Experiment Station

11. IF INCORPORATED, GIVE STATE OF INCORPORATION
N/A

12. DATE OF INCORPORATION
N/A

13. NAME AND ADDRESS OF APPLICANT REPRESENATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS

Dr. Raymond A. Moore, Director
South Dakota Agric. Exp. Station
SDSU, Brookings, SD 57007-1096

Dr. Fred A. Cholick, Spring Wheat Breeder
Dept. of Plant Science, Ag Hall
SDSU, Brookings, SD 57007-1096

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED

a. ☒ Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*

b. ☒ Exhibit B, Novelty Statement

c. ☒ Exhibit C, Objective Description of the Variety *(Request form from Plant Variety Protection Office.)*

d. ☒ Exhibit D, Additional Description of the Variety

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act.)*
☒ Yes *(If "Yes," answer items 16 and 17 below)* ☐ No

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☒ Yes ☐ No

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☒ Foundation ☒ Registered ☒ Certified

18. DID THE APPLICANT(S) FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
☐ Yes *(If "Yes," give date)*
☒ No

19. HAS THE VARIETY BEEN OFFERED FOR SALE OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
☐ Yes *(If "Yes," give names of countries and dates)*
☒ No

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT
R. A. Moore
DATE 8-27-84

SIGNATURE OF APPLICANT
Fred A. Cholick
DATE 8-27-84

FORM LMGS-470 (8-83) (Edition of 9-81 is obsolete)

13A. Exhibit A, Origin and Breeding History

1. 'Guard', (CI 17934) is an F_4 derived head selection from the cross of Eureka (CI 17738) a hard red spring wheat, and a hard red winter wheat 'Dawn' (CI 17801). The history is presented as a flow chart for each generation in Table 1 with additional history presented in the Registration of Guard Wheat.

2. Breeders' seed and foundation seed were increased at Brookings, SD, in 1981 and 1982, respectively. Guard has been uniform and stable for all morphological characters during the past four generations of selfing and increase. Any offtype that have been identified were from mechanical mixture and were removed.

Table 1. Breeding History of Guard Hard Red Spring Wheat.
Pedigree: Eureka/Dawn
Selection: SD 8015

Generation	Year	Location	Plant	Harvest	Nursery Identification
F_0	Fall 1977	Greenhouse	Made cross	Bulked 3 heads	35/512
F_1	Spring 1978	Greenhouse	Increased	Bulked	x835
F_2	Summer 1978	Brookings & Redfield, SD Manhattan, KS	Field trial Hessian fly evaluation	Selected resistant heads	10276
F_3	Fall 1978	Manhattan, KS Greenhouse Brookings, SD	Head rows screening. Selected resistant plants.	Transplanted resistant plants	391-413
F_4	Summer 1979	Brookings	Plant Rows	Head Selection	23439
F_5	Winter 1979-80	Mexico Manhattan, KS	Plant row Plant row	Bulk N/A	3586-3600
F_6	Summer 1980	5 locations Brookings, SD	Yield trials small plot increase	Bulked heads	SD 8015
F_7	Winter 1980	Yuma, AZ Manhattan, KS	Head Rows Increase. Check Hessian fly reactions	Bulked N/A	SD 8015
F_8	Summer 1981	Brookings South Dakota	Breeders Seed Inc. State Yield Trials	Bulked	SD 8015
F_9	Summer 1982	Moody Co.	Foundation Seed production	Bulked	SD 8015

13B. Novelty Statement

'Guard' is distinguished from other awned hard red spring wheat cultivars by its homozygous resistance to Hessian fly (Tables 2 and 3). This resistance was derived from 'Dawn', the winter wheat parent in the cross, and has been identified as 'Marquillo' type resistance. The two varieties with the plant type most similar to 'Guard' are 'Protor', and '2369'. When individual character is examined in Exhibit C other varieties are found to be more similar for individual characters; however, when the whole plant is considered 'Protor' and '2369' are the most similar.

1. 'Protor' can be distinguished by its differential stem rust reaction to races RKQS, HJCS, QFBS and HNLQ (Table 4). In addition, 'Protor' can be distinguished by its longer mixing time requirement (Table 5).

2. '2369' can be distinguished by its differential stem rust reaction to races RTQQ, RKQS, HJCS and QFBS. In addition, the leaf rust reaction (field test) reported from St. Paul, MN, in the Uniform Regional Hard Spring Wheat Nursery that '2369' was 60S and 'Guard' was 5MS. The variety 2369 is 4 days later in maturity than Guard. Guard, Protor and 2369 were evaluated for Hessian fly resistance in a greenhouse experiment. These lines were tested to a Hessian fly collection made in South Dakota. Guard was 100% resistant, Protor was 97% susceptible (1 plant was recorded as resistant) and 2369 was 100% susceptible.

Table 2. Greenhouse test - percent plants resistant to specific Hessian fly biotypes.

Cultivars	(genels) for resistance	Biotypes of Hessian Fly					
		SD*	GP	A	B	C	D
Guard	(Marquillo type)	96	97	95	37	79	87
James	(None)	--	3	3	5	0	--
Coteau	(None)	--	0	0	0.5	0	--
Seneca	(H_7H_8) winter wheat	95	98	6	15	5	5
Monon	(H_3) winter wheat	84	99	63	4	93	0.6
Ella	(H_9) winter wheat	72	98	59	99	30	93
Parker	(Marquillo) winter wheat	97	87	59	4	67	52

*SD - not biotype - represents collection of Hessian fly from South Dakota.

Table 3. Field tests in South Dakota - Percent resistant plants from two field trials in 1982.

Variety[1]	Percent Resistant Plants		
	Brown County	Day County	Mean
Guard	99	100	99
Butte	84	93	88
James	71	78	75
Len	82	90	86
Centa	67	85	76
Olaf	69	79	74

[1]All these varieties have been found to be susceptible in greenhouse tests or previous field tests except Guard.

Table 4. Seedling stem rust reaction as determined by the Cereal Rust Laboratory, St. Paul, MN.

	Race									
Entry	QSHS	TNMH	TNMK	RHRS	RSHS	RTQQ	RKQS	HJCS	QFBS	HNLQ
Guard	-	2+	2+	;1,2=	2	2	2	2=	2,=;	2=
Olaf	2=	2	2-	2	2	;,2=	2	2=	2-	2=
Protor	2-	2	2	;1-	2	2-	;1	0	0;	0
2369	1	2,=;0	2	0;	-	0;	;	0	0;	-
Marburg	23	-	32	23	-	0;	23	2	-	;1
Wheaton	2=	;	;	0;	2-	;	-	0;	;	0;

Table 5. Summary of quality data for Guard and selected checks 1980-1982.

	Wheat Protein (12)	Flour Extraction (12)	Bake Absorption (12)	Mixing Time (12)	1980 (3)	1981 (2)	1982 (1)
	%			min.	cc		
Guard	15.0	51.4	64.1	4.6	897	830	194
Butte	15.3	55.5	65.6	2.9	-	-	192
Olaf	15.3	52.4	64.3	4.3	-	-	214
Era	14.4	58.9	63.6	3.9	863	-	195
Protor	14.7	47.3	61.2[2]	7.0[2]	-	890	-

[1]Number of tests (years: location-years).

[2]Due to long mixing time only Fargo data presented 5 tests.

FORM APPROVED: OMB NO. 0581-0055

EXHIBIT C
(Wheat)

U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN AND SEED DIVISION
BELTSVILLE, MARYLAND 20785

OBJECTIVE DESCRIPTION OF VARIETY

WHEAT *(TRITICUM SPP.)*

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)
South Dakota Agric. Exp. Station (Dr. Fred A. Cholick)

ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*
Dept. of Plant Science
South Dakota State University
Brookings, SD 57007-1096

FOR OFFICIAL USE ONLY
PVPO NUMBER 8500001
VARIETY NAME OR TEMPORARY DESIGNATION Guard

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. KIND:

[1] 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB

2. TYPE:

[1] 1 = SPRING 2 = WINTER 3 = OTHER *(Specify)* _____ [2] 1 = SOFT 2 = HARD 3 = OTHER *(Specify)* _____

[2] 1 = WHITE 2 = RED 3 = OTHER *(Specify)* _____

3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:

[0][5][6] FIRST FLOWERING [0][6][0] LAST FLOWERING

4. MATURITY *(50% Flowering)*:

[0][5] NO. OF DAYS *EARLIER* THAN ..... [3] 1 = ARTHUR 2 = SCOUT 3 = CHRIS

[ ][ ] NO. OF DAYS *LATER* THAN ..... [ ] 4 = LEMHI 5 = NUGAINES 6 = LEEDS

5. PLANT HEIGHT *(From soil level to top of head)*:

[0][7][4] CM. HIGH

[ ][ ] CM. TALLER THAN ..... [ ]

[1][9] CM. SHORTER THAN ..... [3] 1 = ARTHUR 2 = SCOUT 3 = CHRIS 4 = LEMHI 5 = NUGAINES 6 = LEEDS

6. PLANT COLOR AT BOOTING *(See reverse)*:

[2] 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

7. ANTHER COLOR:

[1] 1 = YELLOW 2 = PURPLE

8. STEM:

[1] Anthocyanin: 1 = ABSENT 2 = PRESENT

[2] Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT

[0][3] NO. OF NODES *(Originating from node above ground)*

[1] Waxy bloom: 1 = ABSENT 2 = PRESENT

[1] Internodes: 1 = HOLLOW 2 = SOLID

[2][3] CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW

9. AURICLES:

[1] Anthocyanin: 1 = ABSENT 2 = PRESENT

[1] Hairiness: 1 = ABSENT 2 = PRESENT

10. LEAF:

[1] Flag leaf at booting stage: 1 = ERECT 2 = RECURVED 3 = OTHER *(Specify)*: _____

[1] Flag leaf: 1 = NOT TWISTED 2 = TWISTED

[1] Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT

[1] Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT

[0][9] MM. LEAF WIDTH *(First leaf below flag leaf)*

[2][2] CM. LEAF LENGTH *(First leaf below flag leaf)*:

FORM LMGS 470-6 (6-82) (Formerly Form LPGS 470-6 (3-79), which may be used)

7

Best 10/1/85

11. HEAD:

[3] Density: 1 = LAX 2 = DENSE 3 = Mid-dense

[1] Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER (Specify) _____

[4] Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETED 3 = AWNLETED 4 = AWNED

[2] Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED 5 = BROWN 6 = BLACK 7 = OTHER (Specify): _____

[0][7] CM. LENGTH

[0][9] MM. WIDTH

12. GLUMES AT MATURITY:

[1] Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.) 3 = LONG (CA. 9 mm.)

[2] Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 3.5 mm.) 3 = WIDE (CA. 4 mm.)

[2] Shoulder shape: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED 4 = SQUARE 5 = ELEVATED 6 = APICULATE

[3] Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

13. COLEOPTILE COLOR:

[1] 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN:

[1] 1 = ABSENT 2 = PRESENT

15. JUVENILE PLANT GROWTH HABIT:

[2] 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

16. SEED:

[1] Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL

[1] Cheek: 1 = ROUNDED 2 = ANGULAR

[2] Brush: 1 = SHORT 2 = MEDIUM 3 = LONG

[1] Brush: 1 = NOT COLLARED 2 = COLLARED

[ ] Phenol reaction (See instructions): 1 = IVORY 2 = FAWN 3 = LT. BROWN 4 = BROWN 5 = BLACK

[3] Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specify) _____

[0][6] MM. LENGTH

[0][3] MM. WIDTH

[3][0] GM. PER 1000 SEEDS

17. SEED CREASE:

[2] Width: 1 = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI'

[2] Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT' 2 = 35% OR LESS OF KERNEL 'CHRIS' 3 = 50% OR LESS OF KERNEL 'LEMHI'

18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[2] STEM RUST (Races) TNMK, QSHS HNLQ, RHRS

[2] LEAF RUST (Races) Field Reaction

[1] STRIPE RUST (Races) Field Reaction

[ ] LOOSE SMUT

[0] POWDERY MILDEW HJCS, QFBSRSHS

[0] BUNT

[ ] OTHER (Specify) _____

19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[0] SAWFLY

[0] APHID (Bydv.)

[0] GREEN BUG

[0] CEREAL LEAF BEETLE

[ ] OTHER (Specify) _____

HESSIAN FLY RACES: [2] GP [2] A [1] B [2-1] C 79% R [2] D [ ] E [ ] F [ ] G

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Wheaton/Oslo	Seed size	Wheaton
Leaf size	WS 1809	Seed shape	Wheaton
Leaf color	James	Coleoptile elongation	James
Leaf carriage	Len	Seedling pigmentation	WS 1809

INSTRUCTIONS

U.S. DEPARTMENT

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

(a) L.W. Briggle and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States, Technical Bulletin 1278, United States Department of Agriculture.

(b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. (See attachment.)

LEAF COLOR: Nickerson's or any recognized color fan should be used to determine the leaf color of the described variety.

13D. Exhibit D, Additional Description of Guard

1. Comparison of Guard and checks from 1982 Uniform Regional HRS Wheat Performance Nursery is presented in Table 7. Guard has demonstrated a good performance throughout the HRS wheat region.
2. Results from the Cooperative Laboratories conducted by the Crop Quality Countil comparing Guard (SD 8015) and Len are enclosed. Len is used as the quality check in this test. This data confirms that Guard has acceptable bread making quality.

Table 7. Comparison of Guard and checks in the 1982 Uniform Regional HRS Wheat Performance Nursery.

Variety	Yield -15-[1]	Test Weight -14-	Heading[2] -15-	Height -15-	Lodging[3] -6-	1000 kernel weight -4-	Leaf rust -1-	Stem rust -1-
	Q/HA	kg/HL	days	cm	1-9	grams	Cobb	Cobb
Guard	35.2	77.0	29	84	2.3	29	5MS	40MR
Butte	36.0	77.9	29	95	5.1	28	60S	20MR
Era	34.3	74.7	35	80	2.0	27	5MS-S	40M
Waldron	32.9	75.3	30	99	3.2	30	60S	60MS
Chris	26.4	75.5	33	103	6.7	25	5MS-S	50S
Marquis	24.6	75.2	35	106	5.6	28	80S	80S

[1]Number of locations in region.

[2]Days from June 1.

[3]1 = erect; 9 = completely lodged.

8500001

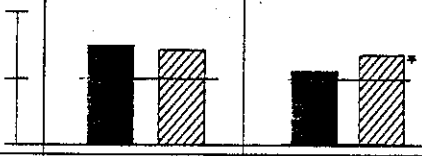
South Dakota 8015
Len----------Check

1982 SUMMARY RESULTS OF COOPERATING LABORATORIES

Location	Crookston, Minn.		Casselton, N.D.					
Variety	Check	SD 8015	Check	SD 8015				
1 Wheat Protein %	15.2	14.9	14.6	14.5				
2 Flour Protein %	14.1	13.7	13.8	13.6				
3 Test Weight	60.4	60.7	61.8	62.5				
4 1000 Kernel Weight (Grams)	31.6	29.8	36.3	34.1				
5 % Large Kernels	49	28*	71	43*				
6 % Small Kernels	2	3*	1	1				
7 Wheat Ash %	1.74	1.81	1.57	1.59				
8 Flour Extraction %	74.3	70.3*	71.8	72.2				
9 Flour Ash %	.432	.394*	.417	.363*				
10 Pounds 0.46% Ash Flour per cwt. wheat	77.1	74.3	75.7	77.6*				
11 Farinograph: Absorption %	61.1	59.9*	62.1	61.2				
Arrival Time	3.0	2.0	4.5	3.0				
Peak	9.0	5.5*	7.0	8.5				
Stability	13.0	11.5	7.5	15.0*				
M.T.I.	25	25	30	20				
12 Bake Absorption (14% M.B.)	62.7	61.8*	63.3	62.7*				
13 Loaf Volume (% of Check)	100	99.4	100	99.9				

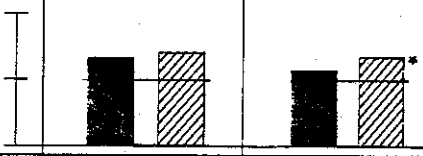
14 Mixing Requirement

Very Long
Long
Medium
Short
Very Short



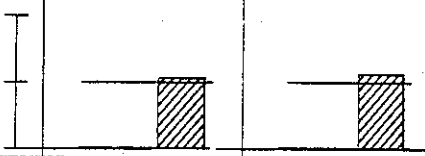
15 Dough Characteristics

Bucky-Tough
Strong-Elastic
Medium-Pliable
Mellow-Very Pliable
Weak-Short or Sticky



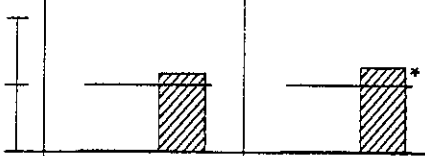
16 Mixing Tolerance

Much More Tolerance Than Check
More Tolerance Than Check
Tolerance Equivalent To Check
Less Tolerance Than Check
Much Less Tolerance Than Check



17 Internal Crumb Color

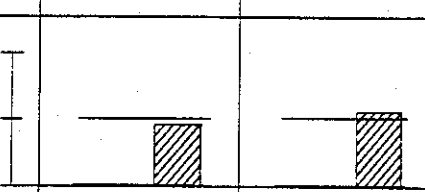
Much Brighter Than Check
Brighter Than Check
Equivalent To Check
Poorer Than Check
Much Poorer Than Check



Reason for ranking below check†

18 Internal Grain and Texture

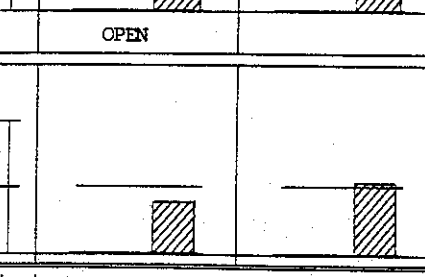
Much Better Than Check
Better Than Check
Equivalent To Check
Poorer Than Check
Much Poorer Than Check



Reason for ranking below check† OPEN

19 Comparison based on laboratories' considerations of all categories (1-18)

Much Better Than Check
Better Than Check
Equivalent To Check
Poorer Than Check
Much Poorer Than Check



*Difference is statistically significant at the 5% level.
†Most frequently reported comment.

E. Area of adaptation and primary use (quality of cultivar).

Guard is adapted to the HRS wheat production areas in Minnesota, North Dakota, South Dakota, and Montana. Guard was developed for Hessian fly resistance; however, it has demonstrated good adaptation throughout the region. Primary use will be for break-making.

F. Breeder and Foundation Seed of Guard will be maintained by the Foundation Seed Stocks project in conjunction with the Spring Wheat Breeding project at South Dakota State University. The cultivar Guard will be constituted from breeder seed and processed through Foundation, Registered, and Certified classes in succeeding generations. Foundation seed is produced from foundation as long as the characteristics satisfy the original breeder's description.

H. No additional restrictions.

United States Department of Agriculture

Agricultural Marketing Service

Livestock and Seed Division

National Agricultural Library Building
Beltsville, MD. 20705

PLANT VARIETY PROTECTION OFFICE

Gentlemen:

Subject: Application No. 8500001
'Guard' WHEAT

As provided in section 83(a) of the Plant Variety Protection Act, 7 U.S.C. 2321, we request that the Certificate on the above variety be issued with a notation on the Certificate that the right to exclude others from selling, offering for sale, reproducing, importing or exporting the variety covered by this Certificate, or using it in producing a hybrid or different variety is waived, except that this waiver shall not apply to breeders seed, foundation seed, labeling requirements, and blending limitations.

It has been agreed that the Certificate should be issued in the name(s) of:

SOUTH DAKOTA AGRICULTURAL EXPERIMENT STATION

9/20/85
(Date)

R. A. Moore
(Signature)
R. A. Moore, Director, AES

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